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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,750	09/29/2003	Timothy J. Dupuis	SIL.P0066	1480

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EXAMINER	
SHINGLETON, MICHAEL B	
ART UNIT	**PAPER NUMBER**
2817	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/673,750	DUPUIS, TIMOTHY J.	
	Examiner	Art Unit	
	Michael B. Shingleton	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *the amendment filed on 1-26-2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-8,11-13,25-28 and 30-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11-13 and 32-39* is/are allowed.

6)☒ Claim(s) *8,25-28,30,31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

MICHAEL B SHINGLETON
PRIMARY EXAMINER
GROUP ART UNIT 2817

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The finality of the previous Office action has been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8, 25, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashima 6,069,528 (Kashima) in view of Hibbs, Jr. 4,032,853

Figure 1 of Kashima discloses a circuit and method for "protecting" devices in an RF power amplifier and a method of controlling an RF power amplifier. This circuit/method includes providing a peak detector, elements 3 and 4 that are connected to a RF power amplifier 1. This peak detector clearly detects a peak voltage at a first node of the power amplifier, i.e. the output of the power amplifier. This circuit/method disclosed by Kashima also includes providing for power control circuitry 7. This control circuitry 7 is coupled to the peak detector and the power amplifier as is clearly illustrated by Figure 1 of Kashima. This power control circuitry also controls the gain of the power amplifier (See column 3, lines 37-63). This control circuitry does this by determining whether the detected peak voltage is higher than a threshold voltage provided by elements 8 and 9. If this detected voltage is higher than the threshold voltage then the gain of the power amplifier is decreased. This limits the power output of the amplifier. If this detected voltage is lower than the threshold voltage then the gain of the power amplifier 1 is increased. Again see column 3, lines 37-63. The coupler 2 "detects" the output power of the RF power amplifier 1 as read in light of the specification. Note the sentence bridging pages 6 and 7 of the specification. Here applicant states: "[a] power detector, such as (a) directional coupler 112, is used to detect the output power." Also this directional coupler 2 of Kashima is clearly illustrated in Figure 1 of Kashima as being coupled to the output of the power amplifier and the control circuitry 7. Kashima accordingly fails to show the use of a divider circuit coupled between the peak/power detector and the "one or more critical nodes". Note that "one or more critical nodes" could be the output node of the power amplifier.

Hibbs, Jr. shows the use of a divider circuit composed of a resistors 33 and 35 to form a divider circuit that is connected between the "one or more critical nodes" which the case of Kashima and Hibbs is the output of a power amplifier, and the peak detector 29. The use of a divider circuit allows for the detection of the output of the amplifier. This is an art recognized equivalent way to detect the output of an amplifier as taught by Hibbs, Jr.

Thus because these two sensing means i.e. the directional coupler and the divider circuit were art-recognized equivalents at the time the invention was made, one or ordinary skill in the art would have found it obvious to substitute the resistive divider for the directional coupler arrangement in Kashima.

With respect to claim 30 the divider is recited as a capacitive divider circuit. It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the resistive voltage divider circuit of the combination made obvious above with a capacitance based divider circuit since the examiner takes Official Notice of the equivalence of the capacitance based divider circuit and the resistance based divider circuit for their use in the amplifier art and the selection of any of these known equivalents to provide a voltage dividing function would be within the level of ordinary skill in the art.

Note that the capacitance divider, the resistive divider and the directional coupler, are all well known sensing circuits used at the output of an amplifier to sense the amplifier's output as such these are art-recognized equivalents to those of ordinary skill in the art.

Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashima 6,069,528 (Kashima) and Hibbs, Jr 4,032,853 as applied to claims 8, 25, 30 and 31 above, and further in view of French 5,510,753 (French).

Kashima is silent on the use of a transistor i.e. switching device for the power amplifier. It is well-known to employ a transistor for a power amplifier. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a transistor in the power amplifier of Kashima because, as the Kashima reference is silent on the exact power amplifier circuit one of ordinary skill in the art would have been motivated to use any art-recognized equivalent power amplifier circuit including the conventional power amplifier that utilizes a power amplifier.

An alternative to sensing the peak voltage at the output of the power amplifier is to sense it at the input of the amplifier. French shows this in Figures 3 and 4. Note element 108. This allows for a fast response especially in certain fault conditions like a short (See column 10 around line 37). Furthermore,

clearly the output of the power amplifier is proportional to the input and thus the peak detector at the input is in effect sensing the power at the output of the power amplifier.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to detect the power of the amplifier at the output of the power amplifier via a peak detector at the input of the power amplifier given the art recognized equivalence of these two peak detector circuits as taught by French. One of ordinary skill in the art would have been additionally motivated to make the combination because the sensing of the input of the power amplifier is at a lower level than directly at the output. Note that the coupler or power detector formed on the input side of the power amplifier of the combination made obvious above is "coupled" to the output of the power amplifier via the power amplifier itself.

Allowable Subject Matter

Claims 2-7 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 11-13, and 32-39 are allowable over the art of record.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Medendorp discloses an amplifier protection circuit having a peak detector coupled to the output of a power amplifier which controls the gain based on the peak/power output of the power amplifier so as to protect the amplifier from excessive power levels. This is similar to the primary reference to Kashima 6,069,528.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 and after July 15, 2005 the fax number will be 571-273-8300. Note that old fax number (703-872-9306) will be service until September 15, 2005.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS
July 23, 2005
2-6-06

Michael B Shingleton
Primary Examiner
Group Art Unit 2817